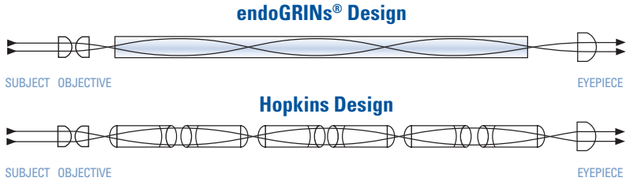
Rigid Borescopes

The heart of a rigid borescope design is the relay lens system. Gradient Lens Corporation's patented endoGRINs® design makes lens manufacturing and assembly easier and less costly, without sacrificing image quality.

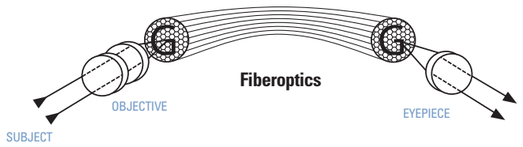


Our patented endoGRINs® gradient index lenses are the core technology of Hawkeye® Pro and Classic Rigid Borescopes. The elegant simplicity of the endoGRINs design gives excellent optical quality at a much lower cost than traditional alternatives, like the Hopkins design, which uses many expensive micro-lenses and optical glass rods.

As described above, rigid borescopes use traditional, glass optics to relay the image. If your entry path is straight, a rigid borescope delivers excellent image quality and can be more cost-efficient than either fiberoptic or video borescopes.

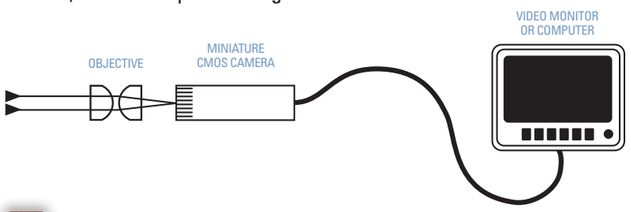
Fiberoptic Borescopes

Fiberoptic borescopes use optical glass fibers to relay the image. Resolution depends on the number of fibers and their diameter. Each fiber forms a pixel in the final image. If your entry path is not straight, fiberoptic borescopes have the advantages of flexibility and articulation.



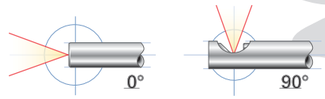
Video Borescopes

When compared with any other type of borescope, video borescopes deliver the best combination of image quality and convenience. Videoscopes transmit light through the objective lens to miniature video cameras, which then convey the image to a portable handheld monitor, or, laptop and desktop computers. When portability, still and video image capture, and image storage and documentation are key factors, a videoscope is the right choice.



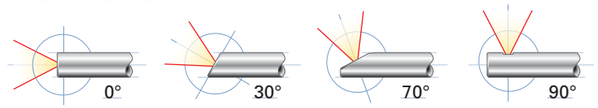
Direction-of-View (DOV)

Hawkeye Pro and Classic Rigid Borescopes see straight-ahead (0°) and sideways (90°) with a mirror tube that slides over the borescope tube, making them two borescopes in one.

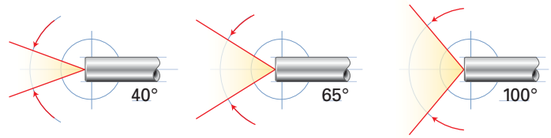


The mirror tube rotates the view over a full 360°, using the knurled knob. Our new mirrors are robust and durable for easy cleaning.

Hawkeye® Blue Rigid Borescopes use prisms to achieve the direction-of-view.



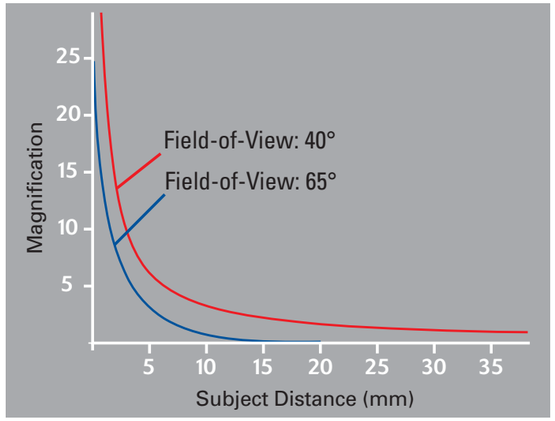
Field-of-View (FOV)



Most inspection situations need a "normal" objective lens (like a typical camera) with an angle of about 40°.

Wider lenses see more, but at a lower magnification, giving less detail. Magnification increases as the borescope approaches the subject, unlike a microscope objective, which gives a fixed magnification at one object distance.

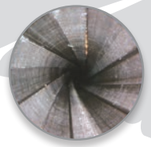
Magnification Versus Subject Distance



In 1995, Gradient Lens Corporation made only one model of borescope. Now we offer more than 80 rigid, flexible, and video Hawkeye® borescopes, and a complete system of interchangeable accessories.

Hawkeye® Rigid Borescopes

Choose a Hawkeye® Rigid Borescope when the entry path is straight. Rigids have better image quality, and are more durable and less expensive, than flexible scopes. Hawkeye® Classic and Pro Rigid Borescopes have DOV's of 0°, 30°, and 90°. Hawkeye® Blue Rigid Borescopes offer a wider selection of DOV's and lengths. Pgs. 14 - 21



Button rifled .204 Ruger as seen with a Hawkeye Pro Slim 17"

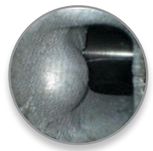
Diesel injector body taken with a Hawkeye Pro Hardy 7"

Burr in a cross hole in an ABS brake manifold viewed with a Hawkeye Pro Slim 7"

Hawkeye® Flexible Borescopes

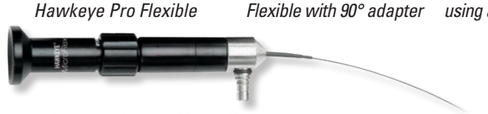
When your entry path is curved, you'll need a Hawkeye® Pro, Classic, or Blue Flexible Borescope. With 0-, 2-, or 4-way articulation, up to 25,000 pixel image resolution, and flexible, durable, tungsten sheathing, Hawkeye® Flexible Borescopes are the finest fiberscopes on the market. Pgs. 22 - 26

A complex casting is inspected using a Hawkeye Pro Flexible



Interior of aluminum casting viewed with a Hawkeye Pro Flexible with 90° adapter

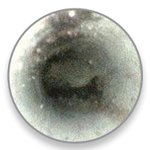
Timing chain in Honda 500 cc motorcycle engine using a Hawkeye Pro Flexible



Hawkeye® Semi-Rigid Borescopes

Hawkeye® Pro MicroFlex Semi-Rigid and Flexible Borescopes offer diameters as small as 0.5 mm, and a 10,000 or 30,000 fiber image bundle, all in "bendable," semi-rigid, Nitinol or polymide sheaths. Pg. 27

A Hawkeye Pro MicroFlex Semi-Rigid borescope inspecting a very small electrical socket



Medical tubing is inspected for flaws or defects with a 0.9 mm Hawkeye Pro MicroFlex Flexible

An electrical circuit board as seen with a 0.9 mm Hawkeye Pro MicroFlex Flexible

Choosing Borescopes

Hawkeye® Video Borescopes

The new Hawkeye® Pro V2 Video Borescopes represent our next generation of fully portable, articulating, videoscopes. The V2 has a large focus range, is bright, and delivers high-res images and video. The V2 is available in diameters of 4 and 6 mm and has 4-way articulation. Pgs. 6 - 7

Non-articulating Hawkeye Classic Flexible Video Borescopes are affordable and functional. Pg. 10

Luxxor® Portable Video Camera

The new Luxxor® Portable Video Camera quickly and easily attaches to any Hawkeye® Rigid or Flexible Borescope, and most other brands as well. Now, any borescope can quickly and easily become a videoscope, simply by attaching the borescope to the video coupler of the Luxxor Portable Camera.

The new Luxxor Camera allows users to view internal visual inspection images on portable or benchtop video monitors, or on laptop or desktop computers. Video footage, and photos, can then be viewed "live," and saved, documented, and e-mailed. Pgs. 8 - 9

Luxxor® Video Systems

Connect any Hawkeye® Rigid or Flexible Borescope to a video camera and display the image on a computer or video monitor. Store, document and e-mail images as well. Pgs. 12 - 13